Claim 10, line 2, change "by means of" to --using--.

Claim 12, line 1, delete "means of".

Claim 16, line 2, change "communicating with" to --receiving data from --.

Claim 17, line 2, change "communicating with" to --receiving data from--.

Please add new Claims 18-128 as follows:

--18. A network-based controller system, comprising:

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a remote computer configured to communicate data over a communication link of a network; and

a controller having

a network interface configured to communicate with said remote computer via said communication link over said network,

a memory having stored therein data indicating a status of equipment controlled by said controller, and an executable program having processor readable instructions, and

a processor configured to send said data and said executable program from said controller to said remote computer via said communication link, wherein

when said remote computer executes said executable program, said remote computer presents said data on said remote computer in a predetermined format.

19. The system of Claim 18, wherein:

said processor and said memory are hosted in a programmable logic controller.

20. The system of Claim 18, wherein:

said executable program further includes processor readable instructions that when executed by said remote computer implements

an update status mechanism configured to cause said remote computer to retrieve updated data indicating an updated status of equipment controlled by said controller from said controller via said communication link, and

an update presentation mechanism configured to cause said remote controller to present said updated data on said remote computer in the predetermined format.

21. The system of Claim 18, wherein:

said executable program further includes processor readable instructions that when executed by said remote computer implements

a control mechanism configured to cause said remote computer to accept a control command and send said control command to said controller via said communication link; and

said processor of said controller is further configured to receive and execute said control command.

22. The system of Claim 18, wherein:

said controller is identifiable on said network by a network address; and

said remote computer is coupled to said controller by accessing said network address to establish said communication link.

23. The system of Claim 22, wherein:

said network address of said controller is accessed by a browser running on said remote computer.

24. The system of Claim 22, wherein:

said data and said executable program are sent from said controller to said remote computer only once while said communication link is established.

25. The system of Claim 18, wherein:

said executable program is a Java program.

26. The system of Claim 18, wherein:

said executable program is an ActiveX program.

27. The system of Claim 18, wherein:

said data and said executable program are sent from said controller to said remote computer as components of a page defined by a markup language.

28. The system of Claim 27, wherein:

said page is sent from said controller to said remote computer only once.

29. The system of Claim 27, wherein:

said markup language is HTML.

30. The system of Claim 18, wherein:

at least a portion of said network is an Internet protocol network.

31. The system of Claim 18, wherein:

at least a portion of said network is the Internet.

32. A computer implemented control system, comprising:

a remote computer connected to a communication link of a network; and

a controller having

a network interface configured to communicate with said remote computer via said communication link,

a memory having stored therein data indicating a status of equipment that operates under control of said controller, and an executable program having processor readable instructions that when executed by said remote computer implements a data presentation mechanism configured to cause said remote computer to present said data on said remote computer in a predetermined format and cause said remote computer to receive and display updated data indicating an updated status of equipment controlled by said controller, and

a processor configured to send said data and said executable program from said controller to said remote computer via said communication link and configured to send said updated data from said controller to said remote controller via said communication link.

33. The system of Claim 32, wherein:

said processor and said controller are hosted in a programmable logic controller.

34. The system of Claim 32, wherein:

said controller is identifiable on said network by a network address; and

said remote computer is coupled to said controller by accessing said network address to establish said communication link.

35. The system of Claim 34, wherein:

said network address of said controller is accessed through a browser running on said remote computer.

36. The system of Claim 34, wherein:

said data and said executable program are sent from said controller to said remote computer a single time during a communications session.

37. The system of Claim 32, wherein:

said executable program further includes processor readable instructions that when executed by said remote computer implements

a control mechanism configured to cause said remote computer to accept a control command and send said control command to said controller via said communication link over said network; and

said processor of said controller is further configured to receive and execute said control command.

38. The system of Claim 32, wherein:

said executable program is a Java program.

39. The system of Claim 32, wherein:

said executable program is an ActiveX program.

40. The system of Claim 32, wherein:

said data and said executable program are sent from said controller to said remote computer as components of a page defined by a markup language.

41. The system of Claim 40, wherein:

said page is sent from said controller to said remote computer a single time during a communications session.

42. The system of Claim 40, wherein:

said markup language is HTML.

43. The system of Claim 32, wherein:

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at least a portion of said network is an Internet protocol network.

44. The system of Claim 32, wherein:

at least a portion of said network is the Internet.

45. A programmable logic controller for controlling equipment, comprising:

a network interface configured to communicate with a remote computer via a communication link over a network;

a memory having stored therein

data indicating a status of the equipment, and

an executable program having processor readable instructions that when executed by the remote computer implement

a data update mechanism configured to cause the remote computer to present said data on said remote computer and to cause said remote computer to retrieve and display updated data indicating an updated status of the equipment; and

a processor configured to send said data and said executable program from said programmable logic controller to said remote computer via said communication link.

46. The programmable logic controller of Claim 45, wherein:

said executable program further includes processor readable instructions that when executed by the remote computer implement

a control mechanism configured to cause said remote computer to accept a control command and send said control command to said network interface via said communication link over said network; and

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said processor is further configured to receive and execute said control command received by said network interface.

47. The programmable logic controller of Claim 45, wherein:

said executable program is a Java program.

48. The programmable logic controller of Claim 45, wherein:

said executable program is an ActiveX program.

49. The programmable logic controller of Claim 45, wherein:

said data and said executable program are sent from said network interface to said remote computer as components of a page defined by a markup language.

50. The programmable logic computer of Claim 49, wherein:

said page is sent from said network interface to said remote computer only one time during a communications session.

51. The programmable logic computer of Claim 49, wherein:

said markup language is HTML.

52. The programmable logic computer of Claim 45, wherein:

at least a portion of said network is an Internet protocol network.

53. The programmable logic computer of Claim 45, wherein:

at least a portion of said network is the Internet.

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54. A method of monitoring a controller from a remote location comprising the steps of:

storing status data indicating a status of equipment being controlled by the controller in a memory of the controller;

storing an executable program in the memory of the controller that includes processor readable instructions for causing a remote computer to present the status data on the remote computer in a predetermined format and for causing the remote computer to request from the controller update data indicating an updated status of the equipment being controlled by the controller and for causing the remote computer to present the update data on the remote controller in a predetermined format;

establishing a communication link between the remote computer and the controller;

sending the status data and the executable program from the controller to the remote computer;

executing instructions of the executable program on the remote computer for causing the status data to be displayed on the remote computer and for causing the remote computer to request update data from the controller via the communication link;

sending the update data from the controller to the remote computer via the communication link; and

executing instructions of the executable program on the remote computer for causing the update data to be displayed on the remote computer.

55. The method of Claim 54, further comprising the steps of:

inputting a control command to the remote computer;

sending the control command from the remote computer to the controller via the communication link;

receiving the control command by the controller; and

executing the control command for the controller.

56. A method for distributing control and monitoring operations, comprising the steps of:

locating a remote controller on a network with a browser on a computer;

downloading a page defined by a markup language from the controller that includes status data from the controller and an embedded program for viewing the status data; and

executing the embedded program on the computer and causing the status data from the controller to be displayed on the computer.

57. The method of Claim 56, wherein:

the embedded program is a Java applet.

58. The method of Claim 56, wherein:

the embedded program is an ActiveX control.

59. The method of Claim 56, wherein:

the markup language is HTML.

60. The method of Claim 56, wherein:

the step of downloading is performed a single time.

61. The method of Claim 56, further comprising the steps of:

connecting the controller to a network; and

connecting a remote computer to the network.

62. The method of Claim 61, wherein:

the network is an Internet protocol network.

63. The method of Claim 62, wherein:

at least a portion of the network is the Internet.

64. The method of Claim 56, wherein:

the embedded program includes instructions for retrieving updated data from the remote controller and for causing the updated data to be displayed on the computer in the same page that was downloaded in the downloading step.

65. The method of Claim 56, wherein:

the page includes hyperlinks to other controllers on the network.

66. The method of Claim 65, further comprising the steps of:

selecting a hyperlink included on the page that corresponds to a second remote controller;

downloading a second page defined by a markup language from the second remote controller that includes status data from the second remote controller and a second embedded program for viewing the status data from the second remote controller; and

executing the second embedded program on the computer causing the status data from the second remote controller to be displayed on the computer.

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67. A method for allowing remote monitoring of a programmable logic controller by sending a single message from the programmable logic controller to a monitoring computer, comprising the steps of:

storing data to be monitored in a memory location of the programmable logic controller that is accessible over a network;

sending a single message to the monitoring computer including a page defined by a markup language that includes an executable program that when executed on the monitoring computer will cause the monitoring computer to retrieve the data to be monitored from the memory location and will cause the data to be monitored to be displayed in a predetermined format on the monitoring computer.

68. A system for allowing remote monitoring of a programmable logic controller by sending a single message from the programmable logic controller to a monitoring computer, comprising:

means for storing data to be monitored in a memory location of the programmable logic controller that is accessible over a network;

means for sending a single message to the monitoring computer including a page defined by a markup language;

means for including in the single message an executable program that when executed on the monitoring computer causes the monitoring computer to retrieve the data to be monitored from the memory location and causes the data to be monitored to be displayed in a predetermined format on the monitoring computer.

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69. A system for distributing control and monitoring operations, comprising:

means for controlling industrial equipment;

means for locating a remote controller on a network;

means for downloading from the means for controlling a page defined by a markup language that includes status data from the controller and an embedded program for viewing the status data; and

means for executing the embedded program on the computer and means for causing the status data from the controller to be displayed on the remote computer.

70. A network-based controller system, comprising:

a remote computer configured to communicate data over a communication link of a network;

a controller having

a memory having stored therein data indicating a status of equipment controlled by said controller, and

a network interface configured to make said data in said memory accessible over another communication link of said network; and

a network server configured to access said data stored in said memory of said controller via said other communication link of said network, and having

a memory having stored therein an executable program having processor readable instructions, and

a processor configured to access said data from said memory of said controller and send said data and said executable program to said remote computer via said communication link, wherein

when said remote computer executes said executable program, said remote computer presents said data on said remote computer in a predetermined format.

71. The system of Claim 70, wherein:

said controller comprises a programmable logic controller.

72. The system of Claim 70, wherein:

said executable program further includes processor readable instructions that when executed by said remote computer implement

an update status mechanism configured to cause said remote computer to request from said network server updated data indicating an updated status of equipment controlled by said controller via said communication link, and

an update presentation mechanism configured to cause said remote controller to present said updated data on said remote computer in the predetermined format.

73. The system of Claim 70, wherein:

said executable program further includes processor readable instructions that when executed by said remote computer implement

a control mechanism configured to cause said remote computer to accept a control command and send said control command to said network server via said communication link;

said network server is further configured to receive said control command and send said control command to said controller via said other communication link; and

said controller is configured to receive and execute said control command.

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74. The system of Claim 70, wherein:

said network server is identifiable on said network by a first network address;

said remote computer is coupled to said network server by accessing said first network address to establish said communication link;

said controller is identifiable on said network by a second network address; and

said network server is coupled to said controller by accessing said second network address to establish said other communication link.

75. The system of Claim 74, wherein:

said first network address of said network server is accessed by a browser running on said remote computer.

76. The system of Claim 74, wherein:

said data and said executable program are sent from said network server to said remote computer only once while said communication link is established.

77. The system of Claim 70, wherein:

said executable program is a Java program.

78. The system of Claim 70, wherein:

said executable program is an ActiveX program.

79. The system of Claim 70, wherein:

said data and said executable program are sent from said controller to said remote computer as components of a page defined by a markup language.

80. The system of Claim 79, wherein:

said page is sent from said controller to said remote computer only once.

81. The system of Claim 79, wherein:

said markup language is HTML.

82. The system of Claim 70, wherein:

at least a portion of said network is an Internet protocol network.

83. The system of Claim 70, wherein:

at least a portion of said network is the Internet.

84. The system of Claim 70, wherein:

the network server is another controller.

85. A method of monitoring a controller from a remote location comprising the steps of:

storing status data indicating a status of equipment being controlled by the controller in a memory of the controller;

storing an executable program in the memory of a network server that includes instructions for causing a remote computer to present the status data on the remote computer in a predetermined format and for causing the remote computer to request from the network server update data indicating an updated status of the equipment being controlled by the controller and for causing the remote computer to present the update data on the remote controller in a predetermined format;

establishing a first communication link between the network server and the controller;

establishing a second communication link between the remote computer and the network server;

accessing the status data from the controller by the network server via the first communication link;

sending the status data and the executable program from the network server to the remote computer via the second communication link; and

executing instructions of the executable program on the remote computer for causing the status data to be displayed on the remote computer.

86. The method of Claim 85, wherein:

said executing step further causes the remote computer to request updated controller data from the network server via the second communication link; and further comprising the steps of,

accessing the updated controller data from the controller by the network server via the first communication link;

sending the updated controller data from the network server to the remote computer via the second communication link; and

executing instructions of the executable program on the remote computer for causing the updated controller data to be displayed on the remote computer.

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87. A computer implemented control system, comprising:

a network server having

a processor, and

a memory having stored therein an executable program having processor readable instructions that when executed by said network server implements a data providing mechanism configured to cause said network server to retrieve data indicating a status of equipment being controlled via a communication link and to provide said data to a monitoring computer for display via another communication link.

88. The system of Claim 87, wherein:

at least one of said communication link and said other communication link is via an Internet protocol network.

89. The system of Claim 88, wherein:

said Internet protocol network is the Internet.

90. The system of Claim 87, wherein:

said data is retrieved from a programmable logic controller.

91. The system of Claim 87, wherein:

said memory further having stored therein an executable data display program for displaying said data on said monitoring computer, and

said data providing mechanism is further configured to send said executable data display program to said monitoring computer.

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92. The system of Claim 91, wherein:

said executable data display program and said data are sent to said monitoring computer as components of a page defined by a markup language.

93. The system of Claim 92, wherein:

said markup language is HTML.

94. The system of Claim 92, wherein:

said executable data display program is a Java program.

95. The system of Claim 92, wherein:

said executable data display program is an ActiveX program.

96. A method of providing status information to a remote location comprising the steps of:

storing an executable program in the memory of a network server that includes instructions for causing a remote computer to present status data indicating a status of equipment being controlled on the remote computer in a predetermined format and for causing the remote computer to request from the network server update data indicating an updated status of the equipment being controlled by a controller and for causing the remote computer to present the update data on the remote computer in a predetermined format;

establishing a first communication link between the network server and the controller;

accessing the status data from the controller by the network server via the first communication link; and

sending the status data and the executable program from the network server to the remote computer via a second communication link established by the remote computer.

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97. The method of Claim 96, further comprising the steps of:

receiving a request for update data from the remote computer by the network server;

accessing the update data from the controller by the network server via the first communication link; and

sending the update data from the network server to the remote computer via the second communication link established by the remote computer.

98. The method of Claim 96, wherein:

the executable program is a Java program.

99. The method of Claim 96, wherein:

the executable program is an ActiveX program.

100. The method of Claim 96, wherein:

at least one of said first communication link and said second communication link is via an Internet protocol network.

101. The method of Claim 100, wherein:

said Internet protocol network is the Internet.

102. The method of Claim 96, wherein:

said executable program and said data are sent to said remote computer as components of a page defined by a markup language.

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103. The system of Claim 102, wherein:

said markup language is HTML.

104. A computer readable medium containing program instructions for execution on a computer system, which when executed by the computer system, cause the computer system to perform the method recited in any one of Claims 96-103.

105. A computer implemented control system, comprising:

a remote computer having

a processor, and

a memory having stored therein an executable program having processor readable instructions that when executed by said remote computer implements a data display mechanism configured to cause said remote computer to request data indicating a status of

equipment being controlled via a communication link, and to display said data in a predetermined format, wherein

said predetermined format having a dynamic component and a static component, and said dynamic component updates independent of said static component.

106. The system of Claim 105, wherein:

said data display mechanism is configured to cause said remote computer to request said data from a network server.

107. The system of Claim 105, wherein:

said data display mechanism is configured to cause said remote computer to request said data from a controller.

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108. The system of Claim 105, wherein:

said communication link is via an Internet protocol network.

109. The system of Claim 108, wherein:

said Internet protocol network is the Internet.

110. The system of Claim 105, wherein:

said data is retrieved by said network server from a programmable logic controller.

111. The system of Claim 105, wherein:

said executable program and said data are sent to said remote computer as components of a page defined by a markup language.

112. The system of Claim 111, wherein:

said markup language is HTML.

113. The system of Claim 105, wherein:

said executable program is a Java program.

114. The system of Claim 105, wherein:

said executable program is an ActiveX program.

115. A method of displaying status information at a remote location comprising the steps of:

storing an executable program in the memory of the remote computer that includes instructions for causing the remote computer to present status data indicating a status of equipment being controlled by a controller on the remote computer in a predetermined format and for causing the remote computer to request update data indicating an updated status of the equipment being controlled by the controller and for causing the remote computer to present the update data on the remote computer in the predetermined format, wherein

said predetermined format having a dynamic component and a static component, and said dynamic component updates independent of said static component;

establishing a communication link between the remote computer and a second computer having a memory element with the status data stored therein;

requesting by the remote computer to the second computer the status data;

receiving the status data from the second computer at the remote computer via the communication link.

116. The method of Claim 115, wherein:

the second computer is a network server.

117. The method of Claim 115, wherein:

the second computer is a controller.

118. The method of Claim 115, further comprising the steps of:

requesting from the remote computer to the second computer the update data;

receiving the update data from the second computer at the remote computer via the communication link.

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119. The method of Claim 115, wherein:

the executable program is a Java program.

120. The method of Claim 115, wherein:

the executable program is an ActiveX program.

121. The method of Claim 115, wherein:

the communication link is via an Internet protocol network.

122. The method of Claim 121, wherein:

said Internet protocol network is the Internet.

123. The method of Claim 115, wherein:

said executable program and said data are received by said remote computer as components of a page defined by a markup language.

124. The system of Claim 123, wherein:

said markup language is HTML.

125. A computer readable medium containing program instructions for execution on a computer system, which when executed by the computer system, cause the computer system to perform the method recited in any one of Claims 115-124.

126. A computer implemented factory automation control system, comprising:

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a remote computer having

a processor, and

a memory having stored therein an executable program having processor readable instructions that when executed by said remote computer implements a factory automation control mechanism configured to cause said remote computer to access a memory of a controller controlling equipment of a factory automation system via a browser, to display in the browser information relating to data stored in the memory of the controller, and to change the data stored in the memory of the controller by manipulating the information displayed in the browser.

127. A method of controlling a factory automation system using a browser comprising the steps of:

accessing a memory of a controller controlling equipment of a factory automation system with a browser;

displaying in the browser information relating to data stored in the memory of the controller; and

changing the data stored in the memory of the controller by manipulating the information displayed in the browser.

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128. A computer readable medium containing program instructions for execution on a computer system, which when executed by the computer system, cause the computer system to perform the method recited in Claim 127.--

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REMARKS

Favorable consideration of this application as presently amended is respectfully requested. Claims 1-128 are pending, Claims 1, 8, 10, 12, 16, and 17 having been amended, and Claims 18-128 having been added by way of the present amendment. New Claims 18-128 are believed to find support in the specification as originally filed, and thus add no new matter.

Accordingly, an action on the merits regarding pending Claims 1-128 is respectfully requested.

Respectfully submitted,

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